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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR    | ATTORNEY DOCKET NO.           | CONFIRMATION NO. |
|---|-------------|-------------------------|-------------------------------|------------------|
| 10/730,967  | 12/09/2003  | John Harvie Chaffin III | 46872-292128                  | 3674             |
| 7590<br>Everman Law Firm, PA<br>6000 Fairview Road<br>Suite 1200<br>Charlotte, NC 28210 |             | 02/05/2007              | EXAMINER<br>TURNER, ARCHENE A |                  |
|   |             |                         | ART UNIT<br>1775              | PAPER NUMBER     |
| SHORTENED STATUTORY PERIOD OF RESPONSE  |             | MAIL DATE               | DELIVERY MODE                 |                  |
| 3 MONTHS  |             | 02/05/2007              | PAPER                         |                  |

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

|                              |                            |                      |
|------------------------------|----------------------------|----------------------|
| <b>Office Action Summary</b> | Application No.            | Applicant(s)         |
|                              | 10/730,967                 | CHAFFIN, JOHN HARVIE |
|                              | Examiner<br>Archene Turner | Art Unit<br>1775     |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) Responsive to communication(s) filed on 07 November 2006.
- 2a) This action is FINAL.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) Claim(s) 1-7 and 32-43 is/are pending in the application.
  - 4a) Of the above claim(s) 40 is/are withdrawn from consideration.
- 5) Claim(s) 41-43 is/are allowed.
- 6) Claim(s) 1-6,32,36-39 is/are rejected.
- 7) Claim(s) 7 and 33-35 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.
 

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

|   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                    | Paper No(s)/Mail Date: _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date: _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|   | 6) <input type="checkbox"/> Other: _____                                    |

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-6,32, 36-39 are rejected under 35 U.S.C. 102(b) as being anticipated by Wu et al (5,209,812) or Aida (5,225,275).

3. Claims 1-6,32, 36-39 are rejected under 35 U.S.C. 102(b) as being anticipated by Philips Patntverwaltung Gmbh (DE 3047888).

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-4,6,32, 36-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gruen et al (as before).

6. The rejections are maintained for the reasons of record. Applicant's arguments filed 11/2/06 have been fully considered but they are not persuasive. Applicant basic argument is that the statement of no or little graphite does not mean the claimed value.

The applicant's attention is directed to 2 references, Gruen et al ("Fabrication and Characterization of Nano-Crystalline Diamond Films") and Chase ("Meeting Materials") where the common understanding in the art expresses that the phrase "no graphite" means about 2.5% graphite, and thus the inherency rejections stand. Similarly, Popovici et al ("Smooth diamond films grown by hot filament chemical vapor deposition on positively based silicon substrates") states that diamond films with smooth surfaces experience the claimed stresses and thus the inherent nature of the rejections stand. The Philip reference has been maintained since the English abstract of record clearly uses diamond, which the examiner interprets to mean the  $sp^3$  orientation and not that of graphite.

7. Claims 7,33-35 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
8. Claims 41-43 are allowed.
9. The claimed root mean square in the prior art could not be found.
10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

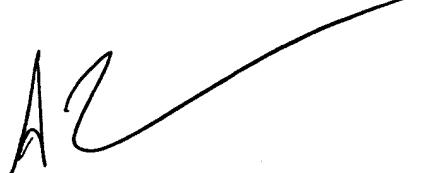
11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Archene Turner whose new telephone number is (571) 272-1545. The examiner can normally be reached on Monday, Wednesday through Friday from 10:30 am. to 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on (571) 272-1540. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Please remember to include on the fax, the art unit 1775, serial number and Examiner's name.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

Art Unit: 1775

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



**A. A. Turner  
Primary Examiner  
Group 1700**

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